

tion was positive, the expanded disk of a star as seen at the short focus ought to show a bright margin, without any stray light outside this; but if it was made hyperbolic, the same effect ought to take place at the long focus, and still with no stray light outside the expanded disk.

But if there remained any residual secondary spectrum of that kind which obtains in an apparently exactly corrected ordinary achromatic, the expanded disk would at the short focus have appeared as it ought, while that produced by the hyperbolic form at the long focus would have stray light round it; thus by figuring it became easy to distinguish the error produced by the secondary spectrum from that produced by any accidental error in the figure of the lenses.

During the working up then I brought it to these curves successively, and was gratified to find that under each condition it answered exactly as it ought, the question being thereby demonstrated much more satisfactorily and conclusively than any direct observation could do it.

Solar Eclipse of March 6, 1867. By C. L. Prince, Esq.

The weather this morning was very unfavourable for observing this eclipse. At 19^h L.S.T. the sky was obscured by large masses of flocculent cumuli and small masses of cumulo strata, the latter at a high elevation, presenting a very peculiar appearance not unlike distant snow-storms. It was not until 19^h 16^m that I first caught a glimpse of the Sun through my 12-feet Equatoreal of 7 inches aperture. The Moon had by that time considerably advanced upon the solar disk. I had decided upon using the lowest power (120) of my Dawes' solar eye-piece, but I found the atmosphere in such a disturbed, tremulous state that I could not satisfactorily use it. I therefore contracted the aperture to 4 inches and made use of a very low power (30), shaded by a neutral tinted glass, which gives a large field of rather more than one degree, and beautiful definition. From 19^h 20^m to 19^h 39^m the clouds were so dense that I could discern the Sun, at intervals only, through them. After this time the Sun shone almost brightly for the space of half an hour. At 19^h 42^m 47^s I observed a remarkable stream of magenta-coloured light pass suddenly along the whole of the preceding edge of the Moon's disk *from south to north*. This appearance was as though a large brush of paint had been quickly dashed upon it. The same tint appeared again slightly (but along the whole preceding limb of the Moon simultaneously) at 1^h 9 14^m for 10 seconds, slightly again at 19^h 54^m 13^s, and at

$19^h 57^m 4^s$ for 6 seconds. At $19^h 58^m$ a very silvery line of light skirted the preceding limb, and at $19^h 59^m$ the magenta tints again appeared for 4^s or 5^s on the northern half of the limb *only*, and obliterated the white line just mentioned. This silvery line was most conspicuous from $20^h 1^m$ to $20^h 5^m$. At $20^h 10^m$ the coloured tints appeared slightly once more, but confined to the northern portion of the Moon's limb. This last appearance continued not more than 4^s . On each occasion the appearance and disappearance of these coloured tints were very rapid, never exceeding one second. At the time of greatest obscuration the Sun could be faintly seen through clouds, and I noticed a conspicuous mountain in N.W., as there were two in S.E. at an earlier period of the eclipse. From $20^h 40^m$ the Sun was entirely obscured by clouds until after the time of last contact.

My Observatory is $24''$ E. of Greenwich.

Uckfield, Sussex, March 7, 1867.

Eclipse of the Sun, observed on Wednesday, March 6, 1867, at Forest Lodge, Maresfield, Sussex. By Captain W. Noble.

The morning sky was nearly covered with cumuli and strata, so that the instant of first contact was not observed; but, the clouds drifting off a few seconds afterwards, a perceptible indentation in the Sun's limb was visible at $19^h 11^m 22^s$ L.S.T. = $20^h 16^m 58^s$ L.M.T. As the Moon's limb advanced, the clouds cleared away, and then the atmospheric tremor was very great. Despite the bubbling and boiling, the inequalities on the lunar limb were well seen, one high mountain being very conspicuous. At the time of greatest obscuration the landscape presented an appearance analogous to that exhibited before a thunder-storm. About $21^h 10^m$ L.S.T. = $22^h 15^m 21^s$ L.M.T. I could trace the Moon's limb for one or two minutes of arc beyond the cusps of the Sun; the contrast between its jet blackness and the blue of the sky being very apparent. I had, about the same time, an impression that I could see the southern part of the lunar limb for a considerably greater distance, and that it was relieved against an excessively faint halo, but this may have been an optical illusion.

The moment of last contact was very well observed. A mountain on the Moon's limb—the last visible projection—quitting the solar limb sharply at $21^h 46^m 39^{s.1}$ L.S.T. = $22^h 51^m 50^{s.24}$ L.M.T. This is probably correct within 0.5 seconds.